# REMARKS

Claims 1, 4-13, 15, 18-27 and 46-50 are pending. Claims 1, 4-13, 15, 18-27 and 46-50 have been rejected. Accordingly, claims 1, 4-13, 15, 18-27 and 46-50 remain pending for examination.

## Present Invention

Claim 1, as amended, recites a structure for representing a query statement having an atomic query element and a combined query element related by a combined operator. In particular, the structure includes an abstract superclass, in which an instance of the abstract super class represents the query statement. The abstract superclass further comprises a first subclass and a second subclass, in which an instance of the first subclass represents the atomic query element and an instance of the second subclass represents the combined query element.

## Claim Rejections – 35 USC 103

The Examiner states,

**8.** **Claims 1, 4-13, 15, 18-27, and 26-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham Spencer (Spencer hereinafter) (US 5,577,251) in view of Witkowski et al. (hereinafter Witkowski) (US Patent No. 6,775,662 B1).**

The Examiner states,

**However, Spencer does not explicitly disclose that such instance of the first subclass represents the atomic query element.**

Applicant agrees with Examiner.

The Examiner further states,

On the other hand, Witkowski discloses that: an instance of the first subclass represents the atomic query element (Fig. 5, item 521, Col. 11, lines 2-5, Witkowski).

Applicant respectfully disagrees.

<u>Witkowski Fails To Disclose an Instance of the First Subclass Represents an Atomic Query Element</u>

Witkowski discloses a system for rewriting queries so that the queries can be executed more efficiently (see Abstract). In particular, queries that include an outer query that references the result set of an aggregate query are rewritten so that the set of groupings specified by the aggregate query omit groupings that only produce rows that cannot satisfy predicates of the outer query. Thus, when an inner query is computed, only rows for groupings that could possibly satisfy the predicates of the outer query are generated (col. 5, ll. 48-57).

FIG. 5 of Witkowski illustrates an example predicate tree 501 that is generated for filtering the criteria (or predicates) of a referencing (outer) query (col. 10, ll. 57-58). The predicate tree is used for generating qualifying patterns that describe qualifying groupings – i.e., those groupings that could possibly satisfy the predicates of the outer query (col. 10, ll. 12-19). The qualifying patterns are represented as bitmaps within Witkowski's system (col. 9, ll. 35-38).

The leaf node 521 of Witowski is part of a predicate tree. Referring to column 11, lines 2-4, "Predicate tree 501 includes leaf nodes 521, 522, 523, 524, 525, 526, 527 and 528, each of which corresponds to a predicate filtering criteria as denoted in FIG. 5". This is clearly different from an instance of the first element query statement having an atomic query element as recited in the claims.

Although Witkowski discloses use of a predicate tree in determining groupings that could possibly satisfy the predicates of the outer query, Witkowski fails to disclose a structure that

includes an abstract superclass, in which <u>an instance of the abstract super class represents a query statement having an atomic query element and a combined query element related by a combined operator</u>.

Nor is it inherent that a query be represented by an instance of an abstract superclass. *See* MPEP 2163.07 - "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).


<u>The claim has limitations not taught by either reference</u>

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.

Spencer and Witowski fail to disclose a structure that includes an abstract superclass, in which an instance of the abstract super class represents a query statement having an atomic query element and a combined query element related by a combined operator. Consequently, the combination of Spencer and Witkowski cannot render claim 1 obvious.

For at least these reasons, Applicant submits that claim 1, and the claims that depend therefrom, are in condition for allowance.

D.    Other Independent Claims

Claims 15 and 46 each incorporates limitations similar to those of claim 1.  Claims 15 and 46 (and the claims that depend therefrom) are also allowable over Spencer and Witkowski for reasons corresponding to those set forth with respect to claim 1.


CONCLUSION

Applicant therefore respectfully requests reconsideration, allowance and passage to issue of the claims as now presented.  Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

                                        Respectfully submitted,

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